ABSTRACT:

The present invention comprises a system and method for managing transportation demand and capacity. The present invention allows a carrier to perform rapid and accurate determinations of the profitability of accepting various load transporting opportunities while taking into account the effect of taking a particular load on the entire carrier network. The present invention makes these profitability determinations based on a network model which is continually updated to account for changing market conditions and the effects of real-time events. The method of the present invention includes creating a dynamic network flow model comprised of multiple nodes, each node representing a specific location at specific time. The marginal value of a unit of capacity (e.g. a truck, a trailer, a rail car, a plane, etc.) at each node is calculated by solving the dual of a linear program associated with the network flow model. A matrix is created by a dynamic network value engine (NVE). The matrix contains a marginal value for a unit of capacity for each node in the network flow model up to some predetermined time in the future. The profitability of transporting a given load from a source node to a destination node is made based on the revenue minus the cost plus the marginal value of a unit of capacity at the destination node minus the marginal value of a unit of capacity at the source node. The marginal value of a unit of capacity at a given node is obtained from the matrix. The dynamic NVE periodically and continually updates the matrix to account for changing market conditions. Transportation decisions are then made based upon the profitability determinations.

The present invention also includes a "webcrawler" feature. The webcrawler searches a database offers by shippers to have loads shipped. The webcrawler determines the profitability of each offer and prioritizes the offers based on profitability.